

FARMING & WILDLIFE IN MISSOURI



Jim Rathert

**By John Buckner
Private Land Specialist
Missouri Department of Conservation**

Photographs by Jim Rathert



Farmers and the Land

FARMERS ARE UNIQUE in that they are the sole caretakers of millions of acres of fertile fields and woodlands. Land-use decisions made by farmers today will have far-reaching effects for generations to come. We depend upon the farmer for many of our basic needs and products. In providing us with food, fiber and timber products, farmers must cope with weather fluctuations, be flexible enough to deal with the supply and demand of perishable goods, and adjust to worldwide political policies which affect farm prices. Their living is based on chance, whether it be that of losing a wheat crop in a hailstorm just before harvest, juggling high feed costs against low livestock prices, or dealing with the competition of foreign commodity trade.

In spite of the adversities farmers face, there is much satisfaction in running their own operation, working together as a family and sharing the fruits of their labors. Farming, however, can involve ex-

treme changes in the landscape, and because markets fluctuate, these land-use changes are cyclic.

Wildlife is a product of the land, so the farmer's land-use decisions affect wildlife populations. Every activity undertaken on the farm affects wildlife, causing changes in the height and sometimes the variety and composition of plants in a particular pasture, hay or grain field, or wood lot. Consequently, wildlife habitat is changed and these animals will either move or die because the changed surroundings may not supply their basic needs.

The farm standard of living is measured not only by bushels of grain, pounds of meat, and tons of forage produced, but also by the quality of life. Wildlife adds to this quality, but its abundance depends on the way the land is used. By using good soil and water conservation practices and giving reasonable consideration to wildlife, farmers can provide for wildlife.

Soil, Our Bread & Butter

EVERY CYCLE of events in our natural world has a starting place. For man, this starting place is the soil. We know there is a continual process of decomposition and regeneration of soil. We also know that soil is derived from many different parent materials, giving rise to many different soil types. These soils vary in composition and fertility.

When the Department of Conservation was created, some of the first wildlife research was channeled into relating soil types and productivity to wildlife populations. A direct relationship between soil fertility and the body weights of raccoons was found; the more productive the soils, the larger the raccoons. A similar study found that rabbit weights varied considerably in different parts of the state. Again, the difference in the quality

of the soil was directly related to the size of the rabbits. Leg bones of rabbits from parts of the state having better soils were up to 12 percent larger than those of rabbits from the regions with lower-fertility soil. Calcium and phosphorus concentrations in the bones corresponded to fertility levels of the soil.

Farmers know that nutrition is important to livestock reproduction rates and overall animal health. Animals seek plants high in the nutrients needed to carry out their basic physiological functions. In the last 40 years, farmers have learned that forage and grain crops respond, up to a point, to fertilizer applications. They also learned that soil is like a bank account; if you expect to take from the soil on a regular basis, you need to put something back.



Good crop yields are the result of proper soil management and protection which is crucial to our existence.

Our knowledge of soil and plant relationships has developed through centuries of trial-and-error farming and it is not surprising that discoveries are still being made about the soil. We don't hear as much about "wearing out" a farm as we did in the 1930s, and today, many farmers are concerned about keeping soil productivity levels high. Since 1977, when Missouri was rated second in the nation in soil erosion, farmers and agribusinesses have been developing new products and methods aimed at keeping topsoil in place and improving the soil.

The Soil Conservation Service (SCS) has worked hard to inform the public about problems caused by erosion and why we need to take a closer look at our farming methods. It is estimated that northern Missouri historically had 16 to 18 inches of topsoil. Due to cultivation of fields that were not adequately protected from soil erosion, well over half of that topsoil has been lost. The amount of erosion that can occur on a particular field depends on the soil type, amount of rainfall, percent slope of the field, length of that slope, crop management, and how the field is farmed.

The SCS estimates that in order to maintain high productivity levels on a field, most soil types should not lose over three to five tons of topsoil per acre per year. Northern Missouri topsoil in tilled cropland is eroding at an average rate of 20 tons per acre every year, about five times the rate at which topsoil is regenerated.

As an example, on a field of Lamoni soils with a 6 percent slope that is 250 feet long, with no soil conservation practices and repeated cropping with soybeans, we would lose 38 tons of topsoil per acre per year. The value of nutrients in a ton of topsoil is conservatively placed at \$5. This means a loss of \$190 worth of nutrients off that field every year, not to mention the creation of a poorer growing medium for crops.

Controlled studies were conducted in several crop fields in Harrison County during the 1982 cropping year. A corn crop on Lamoni soils was grown with equal management throughout the field. Sample locations were chosen which

Lamoni soil, equal management		
UNERODED SOIL	MODERATELY ERODED SOIL	SEVERELY ERODED SOIL
(12 inches topsoil) 180 bushels/acre	(5 inches topsoil) 127 bushels/acre	(3 inches topsoil) 83 bushels/acre

represented uneroded sites, moderately eroded sites and severely eroded sites. (The differences in yields per acre are shown in the accompanying chart.)

Other information showed that in all cases, soybean and corn yields drop as the topsoil becomes thinner. Not only do crop yields drop on eroded land but also it requires more fertilizer to replace nutrients that are lost, more fuel to pull implements through the subsoil, and more water for crops because the subsoil cannot supply water to the plants like topsoil can.

Soil conservation practice costs vary from nothing to more expensive earth-moving projects like terracing. It is possible for a farmer to reduce his erosion rate by one-half simply by plowing on the contour and using conservation tillage, leaving all or a portion of crop residue on the fields after harvest.

Highly erodible land sometimes is cultivated in an attempt to narrow the gap between the farmer's profit and loss. In this situation, it would pay to consider using soil conservation options such as contour farming, conservation tillage and crop rotation. All help to slow the erosion process and you, as a landowner, can ensure the next generation that the soil on their farm will be as productive as it was during your lifetime.

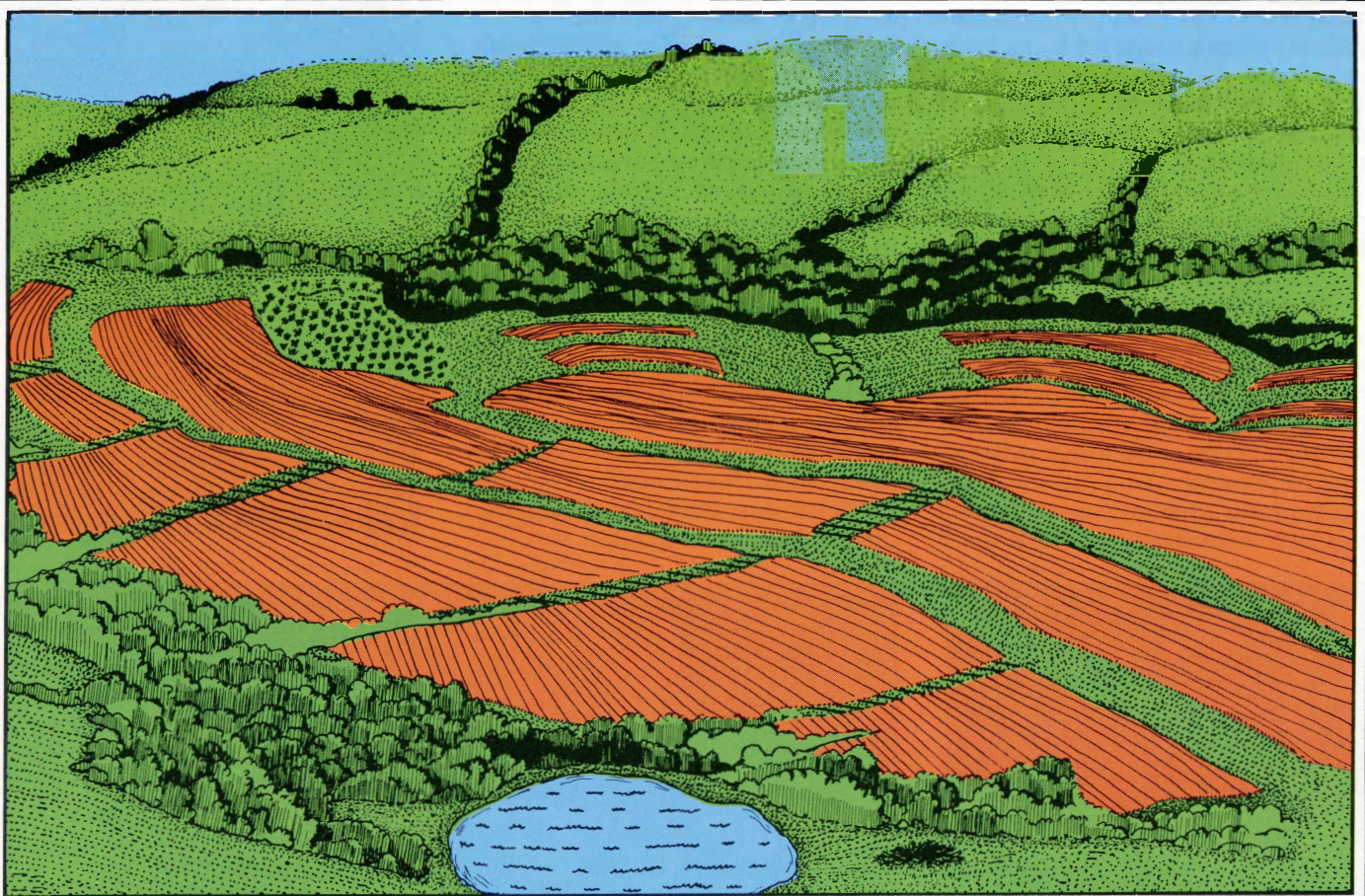
Like people, wildlife need living space, food, shelter and water. The environment which supplies these needs is called habitat, and different species of wildlife need different types of habitat. For example, the wild turkey usually nests in open areas like forest clearings, undisturbed field borders or fields. Turkey poults use these areas for feeding on insects and browsing tender green plants, but they move









Lamoni Soil, 6 percent slope, 250 ft. long, continuous soybeans	
CONSERVATION PRACTICES	SOIL LOSS TONS/ACRE/YEAR
No conservation practices	38.0
Contour-fall plowed	18.5
Chiseled in spring, leaving 2,400 lbs. residue on surface	16.0
Contour and chiseled in spring, leaving 2,400 lbs. residue on surface	7.8
Terraced and chiseled in spring on contour, leaving 2,400 lbs. residue on surface	4.7
Corn-soybeans-wheat rotation chiseled in spring on contour, leaving 5,000 lbs. residue on surface	3.5
Continuous corn chiseled in spring on contour, leaving 5,000 lbs. residue on surface	2.7
Corn-wheat-meadow rotation chiseled in spring on contour, leaving 5,000 lbs. residue on surface	2.3

This SCS soil loss calculation shows the relative effectiveness of various conservation practices in reducing soil loss.

A Conservation Farm Plan

Donna Pasley



- | | | | |
|---|-------------------------------|--|------------------|
|  | Contour buffer strips (grass) |  | Wooded draws |
|  | Brush pile |  | Timber plantings |
|  | Pond |  | Crop fields |
|  | Grassed waterways |  | Woods |

Good farm management can benefit wildlife without incorporating specific wildlife management practices. The above drawing represents a field managed with a conservation farm plan to control soil erosion, increase productivity and provide wildlife benefits. This plan allows for a maximum amount of row cropping while controlling soil erosion with the least costly method.

Contour buffer strips were selected as the most cost-effective erosion control for this particular field. Contour buffer strips of grass cost much less than terracing and provide travel lanes, nesting areas, brood rearing areas and escape cover for wildlife. Because wildlife species such as quail and rabbits range only a short distance for food and cover, buffer strips provide ideal escape areas throughout large fields; they allow close proximity to both food

and cover. Since they are parallel, farming is easier than with terraces or strip crops that require point rows. A grass buffer strip also protects the pond from crop field runoff.

Grassed waterways and wooded draws remove runoff without erosion and also provide wildlife benefits. Wooded draws and field edges are valuable windbreak protection for adjacent crop fields and wildlife.

Areas of this field that are too steep to farm have been left in timber or planted to trees. A managed wood lot provides income from sawtimber or firewood.

A brush pile near the pond further enhances wildlife habitat. Brush piles in out-of-the-way areas protect wildlife from severe winters and predators like coyotes and farm dogs.

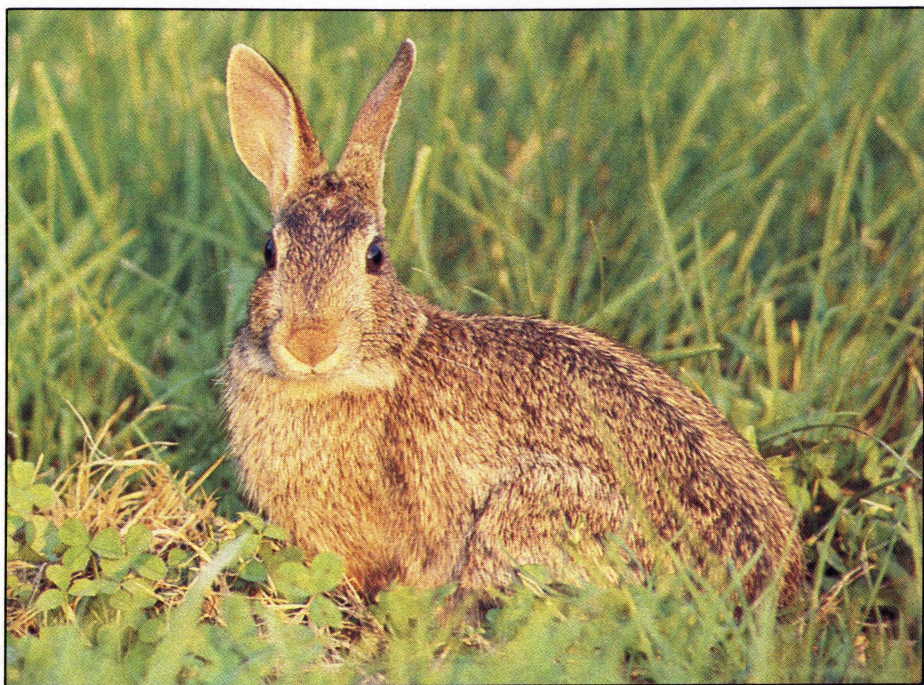
into the timber as winter approaches. The acorn crop is the staple of the turkey diet. If there is a good acorn crop, the birds will remain in the timber to feed on acorns and to roost at night. If acorns are in short supply, the birds will move into crop fields to feed on waste grain, but only if there is good cover surrounding the field for roosting and escaping predators. It is apparent, then, that wild turkeys need open areas with low-growing plants, as well as timber that will produce acorns and provide roosting sites.

Wildlife biologists deal with animal populations. They know the needs of various animals and then attempt to supply these needs through managing the habitat by mowing, grazing, burning, cutting trees, or plowing.

In north Missouri, many farms may lack the different kinds of cov-

er needed for wildlife survival. Suitable cover for feeding, loafing, nesting and winter survival is the most critical piece of the wildlife habitat puzzle. Cover should be scattered throughout the farm in the form of grassed waterways, field borders, woody draws, hedge rows, wood lots or unused areas like field corners. Several types of cover are needed on a farm. A grassed waterway is poor winter cover compared to an ungrazed woody draw. It could, however, provide good nesting cover in the spring or early summer, if it were not mowed until after the nesting season.

There are many opportunities to provide this cover, as well as food and living space that wildlife require, at no cost—leaving a field corner unmowed, for example. The challenge is for farmers to provide for wildlife, while retaining the practical use of their fields.



A more diversified farming operation provides a greater variety of both wildlife habitat and species.

A Changing Landscape

MOST OF our fathers and grandfathers can recall farming before mechanization. Corn was cultivated using horses or mules and a crude cultivator. Hay was stacked loosely in the barn loft using a hay fork and pulley, and generally speaking, farming was done on a small scale. The farm landscape was checkered with 20- and 40-acre fields of corn, clover and oats. Brushy draws and hedge rows dissected many of these fields and, as you might have guessed, it was a wildlife haven.

Modern agricultural trends have changed this picture. The hedge rows and brushy draws are bulldozed to make way for large tractors and implements. Because of low fertilizer prices and the need for cash flow, rotations that incorporate grasses and legumes have been replaced with continuous row crops.

What does this mean in terms of our wildlife populations? Let's look at their needs again. Having the various types of cover available is one thing lacking on many farms, particularly in north Missouri. We know that many wildlife species thrive along field edges because of the combination of food and cover available there. When smaller fields are consolidated into larger fields, that vital field edge is lost.

Before agricultural mechanization, wildlife also thrived on the greater variety of crops that farmers planted. Oats, grasses and legumes were used for nesting and browsing,

and corn provided escape cover and was used as a high-energy, emergency food during winter. Wildlife could satisfy their needs within a relatively short travel distance—a matter of survival for many wildlife species in winter.

Even though farming has become mechanized and is done on a larger scale than it was 30 years ago, some benefits for wildlife still can be provided. Following a soil conservation plan, which is a blueprint for using the land within its capabilities, and being aware of the needs of both wildlife and the farming operation, is practicing good farming and benefiting wildlife. *The cost is no greater than what's required to keep fields at high levels of production on a sustained basis.*

Conservation Tillage

This practice is simply a reduction in the number of tillage operations so that protective amounts of crop residue are left on the field surface throughout the year. Conservation tillage not only leaves residue on the field over winter to hold the soil but also provides waste grain for wildlife. A study in Monroe County during 1974-1977 showed a direct relationship between fall plowing and bobwhite quail diets. When rainy weather prevented fall plowing, quail fed heavily on waste soybean seed. Because of this availability, soybeans were found in quail crops at almost twice the rate

of any other foods. When the weather was relatively dry and farmers fall plowed, weed seed—the traditional, high-protein food—made up the bulk of the quail's winter menu.

When wildlife species have waste grain to feed on, less energy is spent looking for food, and that's important during harsh winter weather. When the thermometer falls to subzero temperatures, the less energy an animal spends moving about in search of food, the better its chances of survival.

Evidence also suggests that no-till fields support a higher density and a greater variety of nesting birds than conventionally prepared fields. For example, research in Iowa showed an average of 37 bird nests per 247 acres in no-till fields and 4 nests per 247 acres in conventionally tilled fields.

Drilled and narrow-row soybeans

This method of planting soybeans is becoming popular because yields sometimes are greater than those harvested from fields planted in conventional 30-inch rows. Narrow-row soybeans take approximately half as long to form a canopy over the row, thereby protecting the soil against erosion and shading out weed seedlings. Because there is no disturbance in drilled and narrow-row soybean fields during the nesting season, these areas can supply additional nesting habitat for ground-nesting birds.

Jim Loveless



Grassed waterways and field borders

In crop fields, water that runs downhill tends to collect in rivulets which funnel into one gushing stream. The eroding action of this water creates gullies which eventually cannot be farmed. Fields generally require a combination of practices to correct erosion problems, but an absolute must is to establish permanent vegetation in low-lying areas. If the low area runs through or along a crop field, we would call it a waterway. Grassed waterways are designed to carry water with a minimum of soil erosion. The width and depth of a waterway depend upon the size of the drainage area and other crop management considerations. A well-managed waterway or field border not only helps to prevent erosion but also provides cover for ground-nesting birds like meadowlarks, pheasants and quail.

With this benefit in mind, you can seed field borders and waterways to grasses and legumes that fit the site and are attractive to wildlife. The Soil Conservation Service can help you select a seed mixture.

These areas must be maintained to keep woody sprouts from invading. Mowing after mid-July avoids the peak of the nesting season. If you need to drive vehicles along your field borders, you probably need to make them eight feet wider.

Underground Outlets

An underground outlet system is one in which underground tile is used to drain surface water from terraces. Underground outlets can empty into existing water courses, eliminating the need for bulldozing, shaping, reseeding or taking land out of production by constructing a waterway. Wooded draws that are stabilized by grass, weeds and trees can be used for receiving water from tile outlets. They also provide wildlife havens.

Pasture rotations and warm-season grasses

The objective of rotating livestock pasture is to achieve maximum use of the forage supply and to retain the longevity of grass and legume stands. Due to the selectivity of grazing livestock and because ground-

nesting birds prefer different grass heights, a moderately grazed pasture provides habitat for many species of wildlife. Cattlemen are beginning to discover the benefits of having part of their grazing acreage seeded to warm-season grasses. These grasses—switchgrass, big and little bluestems, and Indiangrass—grow during the summer months when the cool-season grasses are dormant. The combination of warm- and cool-season grasses allows the farmer to rotate his pastures and keep his livestock fat and healthy throughout the entire grazing season.

Warm-season grasses evolved with naturally caused fires, so prescribed burning is a low-cost maintenance alternative to mowing. Because these grasses grow during the summer months, the ideal time to cut hay is mid-June to early August, depending on the grass species. This works out fine for wildlife because the greater part of the nesting season is over. (A farmer is generally too busy to cut cool-season grass for hay at the time it should be cut—late spring or early summer.)

Farmers also are using switchgrass, a warm-season grass, for waterways and field borders because it is relatively resistant to herbicides, hay yields are high, maintenance is low and it provides good wildlife habitat. Wildlife research has shown that pheasants prefer switchgrass over cool-season grasses for nesting. The clumpy growth

form also makes these grasses attractive to other wildlife species.

Strip-cropping

If all of our farm land were nearly flat, soil erosion would not be much of a problem. We have a lot of land in Missouri that could produce row crops with little soil erosion if it were not for the rolling topography. If you need the crop ground, have a cattle operation, or a market for hay, and are concerned with keeping your topsoil in place, then you may want to try strip-cropping.

Strip-cropping, a farming method that dates back many years, is the practice of growing strips of grasses or small grains with alternate strips of row crops on the natural contour of the land. The grass or small grain strips act as a filter to reduce sediment loss from the row-crop areas. They also reduce the length of the slope on the crop areas which is important in preventing sheet erosion. The Soil Conservation Service plans a strip-cropping system based on the length and percent slope of a field and the width of a farmer's planter so that there are no point rows to farm.

The resulting edges created by alternate strips of two different crops are attractive to wildlife for feeding and nesting. The grass strips should be seeded to grass and legume mixtures that are beneficial to wildlife (see accompanying chart). These mixtures also provide high-quality forage for either a haying operation or fall grazing.

Randy Arndt



Warm-season grasses provide quality livestock forage during hot, dry summer months and good wildlife cover year-round.

Farm Ponds

A properly managed farm pond is a place for fishing, swimming, picnicking and livestock watering; it's also a wildlife haven.



Glenn Chambers

THERE IS probably no other capital improvement that provides more uses and gives the farmer and his family more enjoyment than a farm pond. A pond can serve as a gully erosion-control structure, livestock watering system (by incorporating a stock tank) and, if large enough, can supply the volume of water needed for crop irrigation. The farm pond can be a place to have a family picnic or to catch a stringer of bluegills and bass. Many farm boys have gone for a swim after a hot afternoon of hauling hay and then gigged frogs by the light of the moon. In winter, the pond area provides a place to ice skate, trap a muskrat, or shoot a rabbit. A pond can provide all of these things for many years if it is located in the right place, constructed properly and then managed.

This management applies not only to the pond itself but also to the watershed area draining into the pond. Management determines the life span of a pond and the quality of its water. Livestock should be excluded from the pond area with a permanent fence to

prevent damage to the spillway and embankment and to keep the water from becoming muddy. If present plans for pond use do not include livestock watering, it is still a good idea to install a water-supply pipe at the time of construction. A stock watering tank can then be added if needed.

We know that many species of wildlife use pond areas for nesting, feeding and watering. Research by the Department of Conservation in the late 1940s showed that ponds ranging in size down to one-fourth of an acre of water may receive heavy use by wildlife if they are properly located and the area around them is protected from livestock grazing. Pond areas that were fenced and had quality ground and shrub cover as well as some thick cover in close proximity (like wooded draws which are used as travel lanes) had consistently heavier wildlife use than pond areas that were grazed or lacked some cover nearby. A farmer has a good opportunity to develop and improve existing pond areas as well as plan new ponds with wildlife habitat in mind.



Wood Lots

Russ Reagan



Jim Rathert

Timber is a crop that requires management like any other crop. Managed wood lots provide wildlife benefits and economic return to the landowner.

MAN HAS a habit of judging an object by its worth. This "value" varies depending upon the individual's needs and objectives. What is the timber on your farm worth to you? Do you see it as a nuisance to your farming operation or do you place some value on it? Many farmers don't see a place for timber on their farms because they are not familiar with timber management and the associated wood-product markets in Missouri. Under these circumstances,

much of the timber resource in our state has been converted to pasture and grain crops. If you look at the high cost of conversion and the investment potential that exists in timber management, conversion of existing timber to other uses may not be the best investment of your capital. A decision concerning timber management should be based on factors like the quality of the growing site, the current size, quality and makeup of the timber, intended product use (fuelwood, di-

mension lumber, barrel staves, pallet stock, gunstock blanks, and other uses) and market conditions.

A stand of timber can be thought of as a savings account. The time and money invested in timber stand improvement result in added growth—and therefore value—of the tree stand. This is the equivalent of interest earned on money deposited in a savings account. Trees are one of our greatest renewable resources and the idea of managing a timber stand is to get a *sustainable* yield of timber products. You want to grow the maximum amount of wood fiber as fast as the site will allow and yet have some tree reproduction to replace trees harvested. This requires periodic thinnings.

Because timber lands are not generally assessed as high as crop lands and you may be making money from your wood lot, there are tax benefits to timber owners who manage and receive an income from their woodlands. These federal and state tax regulations make timber management even more attractive.

Add to this the wildlife benefits. In a survey by the U.S. Forest Service in the late 1970s, almost 3,000 birds, mammals, reptiles and amphibians were found to be associated with woodland environments. How do we account for this productivity? Forest habitat provides more different kinds of food (nuts, berries, twigs, leaves, sprouts and more) from more different sources and for more different species of wildlife than any other type of habitat. Forests are also considered to be three-dimensional environments. Many different wildlife species nest and forage in different layers of vegetation from the forest floor to the top of the leaf canopy. Wood lot management with consideration for wildlife can be profitable and at the same time greatly enhance the quality of living conditions for wildlife species that depend on this important habitat.

What Do You Have?

HOW LONG has it been since you last saw an aerial photograph of your farm? It's an eye-opening experience and from a planning standpoint, can be useful. It is easier to see where to put a farm pond, lay out a particular fence line, or plan a terrace system in a crop field. As far as wildlife habitat is concerned, you can see how different types of cover like field borders, grassed waterways, brushy draws and wood lots fit together to form travel lanes for wildlife.

Wildlife habitat, whether pasture, crop field or wood lot, can be enduring and inexpensive when it is part of a basic soil and water conservation plan. The first question a farmer should ask is: "Am I doing everything I can to save my topsoil?" Look at all the options available. If you have grassed waterways and field borders, is their quality suitable as wildlife nesting

habitat? Do you mow them during the nesting season? What grass species are present? Fescue makes poor nesting habitat compared to orchardgrass, timothy or switchgrass. Waterways and field borders are enhanced for wildlife if legumes like Korean lespedeza, red clover or birdsfoot trefoil are present.

The amount of food and cover on the farm are among factors affecting the wildlife present. Even on the most intensively farmed ground with minimum food and cover, you still can have some wildlife provided the cover is of high quality and close to other cover "islands."

Think about the *quality* of a particular brushy draw for winter survival. Are there enough briars, buckbrush and other low-growing plants so that a covey of quail can be sheltered from a heavy snowfall? What is the *distance* to the nearest food source or another patch of

high-quality cover? Winter is the best time of year for evaluating your farm's wildlife habitat. If there is a shortage of weed seeds and waste grain or quality cover, it will show up then. All of our wildlife species are strongly competing for their basic needs in winter, and next spring's breeding population depends on the number of survivors.

A farm is a dynamic system. Farming practices and the intensity of those practices change over the years. A cow-calf operation may change to a sheep or yearling operation. Grazing intensities and the grass/legume composition of pastures change from month to month and our wildlife species populations will adjust or disappear. By observing these changes, you will learn how wildlife is adjusting to your management decisions, and through increased awareness, you may become a better farm manager.



Appraising your farm for wildlife benefits helps you identify ways to improve farm management. An aerial photograph is a good place to begin.

What Can You Do?

For Crop Fields

- ▶ Establish conservation tillage systems.
- ▶ If fall plowing is a necessity on particular bottomland soils, fall plow only a portion of the field, leaving unplowed borders or strips for spring tillage.
- ▶ Minimize herbicide applications.
- ▶ Use crop rotation systems which utilize forage and small-grain crops.
- ▶ Use winter cover crops.
- ▶ Establish field border strips around all or a portion of the field. Plant grass and legume species that are beneficial to wildlife. Mow or disc grass strips at three- to five-year intervals to control woody vegetation.
- ▶ Allow shallow draws to revegetate naturally, or plant to warm-season grasses or a grass-legume mixture. Delay mowing until after July 15 to avoid nesting losses.
- ▶ Seed waterways to grasses and legumes beneficial to wildlife. Delay mowing until after the nesting season.
- ▶ Establish grass filter strips around crop field ponds to reduce sedimentation and add cover.
- ▶ Preserve existing woody draws or plant such areas to shrubs, trees,

or evergreen trees to provide winter cover.

- ▶ Plant field corners to evergreen tree species to provide winter cover.
- ▶ Leave a minimum of one-quarter acre of grain crops unharvested for each 40 acres of crop field. Leave crops in patches or strips near available cover.

For Pasture and Hay Fields

- ▶ Establish legumes in grass forage systems.
- ▶ Establish cool-season and warm-season grass forage systems.
- ▶ Avoid single species grass plantings.
- ▶ Develop a rotational grazing system.
- ▶ Don't overgraze.
- ▶ Leave an unmowed strip or strips around all or a portion of hay fields to provide nesting cover. The strip should be at least 12 feet wide.
- ▶ Encourage woody vegetation in natural drainages and exclude livestock where feasible.

For Wood Lots

- ▶ See a forester about timber-stand improvement.
- ▶ Don't graze livestock in the wood lot.
- ▶ When cutting firewood, leave at least three den trees per acre.

Seed Mixtures Beneficial to Wildlife	
SPECIES	LBS./ACRE
Mixture No. 1	
Orchardgrass	2
Korean lespedeza	2
Ladino clover	1
Timothy	½
Sweetclover	½
Mixture No. 2	
Orchardgrass	2
Redtop	½
Red Clover	2
Timothy	½
Alsike clover	1
Mixture No. 3	
Orchardgrass	8
Korean lespedeza	15
Ladino clover	½
Mixture No. 4	
Alfalfa and Orchardgrass or Brome	10
Mixture No. 5	
Birdsfoot trefoil	5
Timothy	2
Mixture No. 6	
Orchardgrass	4
Red clover	6
Mixture No. 7	
Switchgrass and Birdsfoot trefoil or Korean Lespedeza	8
	1½
	1½



How Can We Help?



Whether harvested or observed, wildlife is a satisfying part of a well-managed farm. Your Conservation Department offers many services to assist you with farm management which benefits wildlife.



The conservation agent is your local Conservation Department representative. Contact your agent for information about wildlife violations, farm planning, or other services available.

IN 1936, the nonpolitical Missouri Conservation Commission was created by constitutional amendment, which gave it responsibility for maintaining the state's wildlife, fisheries and forestry resources. Our hunting and fishing seasons, along with other regulations, are based upon sound, biological information, not political pressures. Our policies and regulations affect everyone in the state and do not always have the support of everyone. But with 94 percent of Missouri land in private ownership, we want to maintain a good relationship with all private landowners.

Farmers have played an extremely important role in helping to perpetuate many wildlife species. Without their help, we would not have succeeded in restoring the white-tailed deer and the wild turkey. We know that wildlife-related problems occur on farms throughout the state. They may involve particular wildlife damage or they may be related to hunting and fishing. We also know that many landowners are interested in their wildlife and forestry resources. The Department of Conservation has many services available, on request, to farmers.

The Department of Conservation is organized into divisions. The farmer may work with individuals from the Protection Division, Wildlife Division, Forestry Division, or Fisheries Division.

Protection Division

Local representatives from the Protection Division are conservation agents. Since 1938, conservation agents have been in the field representing the Department, enforcing wildlife regulations, collecting data for wildlife research and informing farmers of Department programs. They are the official field representatives of the Department, and are readily available to help farmers with wildlife or hunting and fishing programs, or to provide information about any services we have.

In 1981, the Missouri Legislature gave the conservation agent the power to enforce trespass laws. In order for conservation agents to do this, they must be called to the scene by the farmer to secure violation details. The farmer then will have to sign a complaint with the prosecuting attorney.

Besides enforcing regulations, our agents can help you with wildlife habitat planning. They can order trees, shrubs and food plot seed for you, which are free of charge through our PAWS (Planning Ahead for Wildlife Survival) program. If your fishing is poor, the agent will assist in obtaining management recommendations and will complete certain minimum required inspections for fish stocking and pond renovations. If you've lost some feeder pigs to coyotes or suffered substantial crop damage from white-tailed deer, the conservation agent is the person to contact.

Wildlife Division

This division has 12 employees working with agricultural agencies and private landowners with extensive wildlife habitat planning. They also provide trees, shrubs and food plot seed free of charge to make private property more attractive to wildlife. Our field service agents can help you with pond management problems, whether it be aqua-

tic weeds and water turbidity, or fish stocking and harvest recommendations. Your local conservation agent can contact the field service agent for you.

The Department has expanded the field services program in an effort to contact more farmers. Three private land specialists are assigned to Harrison, Johnson and Lawrence counties, two employees specifically work with the Soil Conservation Service in the Green Hills and Platte Territory Critical Erosion Projects, and two are demon-

stration farm managers. The Seat Demonstration Farm is located at the Seat Wildlife Area, on the Worth-Gentry county line, and the Spring River Demonstration Farm is located at the Robert E. Talbot Wildlife Area in Lawrence County. The purpose of these farms is to demonstrate for farmers that with a wide variety of applied conservation practices, land can be farmed intensively and economically while improving wildlife habitat conditions within the farm operation.



Russ Reagan



Department projects (above) have been established to demonstrate farming practices that are economically feasible, reduce soil erosion and provide wildlife benefits as well. High fertilizer costs and low crop prices make crop rotations with legumes more economical (left).

Most farmers have experienced some problem with wildlife: rabbits in the garden, a raccoon in the chicken coop or a coyote that took a liking to feeder pigs. A variety of wildlife species may cause property damage under certain conditions, and the Department provides for their control as follows:

3CSR10-4.130 Owner May Protect Property

Subject to federal regulations governing the protection of property from migratory birds, any wildlife except deer which beyond reasonable doubt is damaging property may be captured or killed by the owner of the property being damaged, or by his agent, at any time and without permit, but only by shooting or trapping except by written authorization of the director. Wildlife may be so controlled only on the owner's property to prevent further damage. Wildlife so captured or killed may not be used, transported, sold or given away but must be reported to an agent of the Commission within 24 hours and disposed of in accordance with his instructions. Deer that are causing damage may be killed only with the permission of an agent of the Commission and by methods authorized by him.

An Extension Trapper Training Program was initiated in 1945 in an effort to handle wildlife damage complaints. This program was an effective way for the Department to provide a needed service to the landowner. The program emphasized trapping for two reasons: Trapping is the most effective way to catch the specific animal causing damage and it is an economical technique that can be readily taught to landowners and is adaptable to their use. The program has expanded through time and is now known as the Wildlife Damage Control Program, with three damage control agents in the state. In most cases, a damage control agent can arrive at the farm within 10 working days after the damage is re-

ported. This program has proved successful, cutting a farmer's losses on an average of 80 percent. If you



Damage control agents are available to assist by training landowners in effective ways to control wildlife damage.

File Photo

have specific damage problems, your local conservation agent or your county Extension Agent can contact a wildlife damage control agent for you.

Forestry Division

Most Missouri farms have some timber. The size and quality of timber on these farms determine timber-management opportunities. This timber is just as much a crop as alfalfa or soybeans, and in order to get quality building materials, have a continuous source of fuelwood, or to realize a dollar profit, it has to be managed. We have a forester in your area who can evaluate your timber and help you with timber management. Timber will not only start paying its way on the farm but also will benefit wildlife tremendously. Your woods also may be eligible to be classed as forest crop land with taxes reduced until timber is sold. The conservation agent can contact the forester for you.

Fisheries Division

Many farms have large ponds that are used for recreation. If you have a pond that is over three acres in size, and have trouble with turbidity, aquatic vegetation or fish-related problems, an area fisheries biologist can help (see Wildlife Division for small farm pond assistance). For fish-related problems, the biologist will survey your lake and recommend stocking rates and harvest. Fish farming recently has become popular in Missouri. Our fisheries biologists can give you up-to-date information on many aspects of this business, too.

The Department's fish hatcheries can supply you with fingerling largemouth bass, bluegill and channel catfish if your pond meets certain minimum requirements. Your local conservation agent has the details. He can also make an appointment with the fisheries biologist for you. □



Fisheries biologists will advise you on pond and lake stocking and management.

Note: A farmer who participates in any of our Department programs is not obligated to open his land to the public for fishing, hunting or any other activity.



Edited by June Hunzeker
Typeset by Mitzi Crump
Designed by June Hunzeker,
Kevin Binkley

The Missouri Department of Conservation receives Federal aid in Fish and/or wildlife restoration. Regulations of the U.S. Department of the Interior and the Missouri Department of Conservation prohibit discrimination on the basis of race, color, national origin, age, handicap, sex, or religious belief. Any person who believes he or she has been discriminated against as described above in any program, activity or facility managed by the Missouri Department of Conservation and/or funded through federal assistance should write to:

Director
Office of Equal Opportunity
U.S. Department of the Interior
Washington, D.C. 20240

or

Director
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102